

Appl. No. : **10/018,637**
Filed : **June 7, 2002**

REMARKS

In response to the final Office Action mailed December 14, 2005, Applicant has amended the application as above. No new matter is added by the amendments as discussed below. Applicant respectfully requests the entry of the amendments and reconsideration of the application in view of the amendments and the remarks set forth below.

With the above amendment, Claims 1 and 22 are amended, and Claim 24 has been added. Each of these independent claims 1, 22, and 24 include at least the following two limitations on the grooves:

1. Each groove is formed such that the width of the groove is narrower at the inner portion thereof than at the opening thereof.
2. Each groove is narrower than a diameter of the through-holes

In the prior art of Yarger, the grooves are wider at their inner portions than at their openings. In the prior art of Hideki, the grooves are wider than the through-hole diameters. Both of these groove designs have a serious disadvantage. When draining with the catheter, suctioning of the internal organs such as the greater omentum and abdominal wall occurs, and this can cause pain and discomfort to the patient. In the prior art of Hideki, the tissue of the patient will be pulled into the grooves because of their relatively large width. With the prior art design of Yarger, the flanges covering the groove entrance are thin and will deform due to draining pressure. This can cause the surface of the tube to become uneven, again resulting in discomfort to the patient where the catheter is in contact with internal organs. This problem is explained in the specification on Page 6.

By providing grooves that are narrower than the holes and that are also narrower at an inner portion than at the opening, pain and discomfort is reduced. This solution to the problem is not taught or suggested by any of the prior art of record, either alone, or in combination.

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The Examiner further suggests in the Office Action that the numerical size ranges for the grooves set forth in Claims 1 and 22 are a mere design choice, and would be obvious over Yarger. However, the dimensions set forth in these claims are optimal for obtaining significant benefits. The narrowness of the groove and its cross sectional shape allow the groove to be relatively deep, and allow the bottom of the groove to reach very close to the inner surface of the catheter, while still maintaining structural strength of the catheter. Before optimizing a variable can be considered obvious, the variable must be recognized as result effective. This has not been recognized in the prior art of record, and it is accordingly submitted that optimizing these dimensions in the context of the remaining claim elements cannot be considered obvious.

It is therefore respectfully submitted that the pending claims are in condition for allowance.


CONCLUSION

In view of Applicant's foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 4/13/06

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